

Amendments to the Specification

Please replace the paragraph at page 7, lines 6-20, with the following amended paragraph:

FIG. 3 is a schematic illustration of a supercritical processing system 300 for processing a semiconductor wafer with a fluid, in accordance with embodiments of the present invention. As FIG. 3 depicts, in one embodiment of the invention, a supercritical processing system 300 for processing a semiconductor wafer with a fluid includes a circulation loop 303 coupled to a high-pressure processing chamber 301. In one embodiment, the supercritical processing system 300 includes an inlet ~~line~~ means 305 for introducing the fluid into the circulation loop 303. In certain embodiments, the inlet ~~line 300~~ means 305 includes an inlet port 310 in the circulation loop 303 and a back-pressure regulator 330 coupled to the inlet port 310. In one embodiment of the invention, the inlet ~~line 300~~ means 305 includes a pump 340 for compressing the fluid to form a pressurized fluid, a first line 317' for transferring the pressurized fluid from the pump 340 to the back-pressure regulator 330 and a second line 317 for transferring a quantity of the fluid from the fluid source 350 to the pump 340. In one embodiment, the first line 317' is configured to maintain a uni-directional flow 335 of the pressurized fluid from the pump towards the back-pressure regulator. In one embodiment, the second line 317 is configured to maintain a uni-directional flow 345 of the fluid from the fluid source ~~350~~ 321 through a valve 323 to the pump 340.

Please replace the paragraph at page 8, lines 16-24, with the following amended paragraph:

According to certain preferred embodiments, the means for introducing a process stream 433 into the processing chamber 401 operates while maintaining a constant pressure in the processing chamber 401. In one embodiment, the apparatus includes a back-pressure regulator for maintaining a constant pressure in the processing chamber. Preferably, an apparatus in accordance with the invention includes means for performing a series of decompression cycles, such as a pump and a vent. Preferably, an apparatus in accordance with the invention includes a process control computer 450 coupled for controlling any number of valves 407, 415, 415', 419, ~~423~~, 425, and 427, pumps 411, heaters 431, or other devices (not shown). The control signals are shown coupled with dotted lines in FIG. 4.